

Dermatology consultations: how long do they take?

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ABSTRACT

The rising demand for dermatology services calls for more efficient clinics. However, there is a lack of evidence to guide the allocation of time for dermatological consultations. Our study analysed 607 dermatology consultations led by 23 clinicians. Consultation lengths were found to be dependent on the grade of clinician seen, nature of attendance (new or follow-up) and nature of final diagnosis. The median times taken for all consultations involving general dermatological conditions or suspected skin tumours were 16.5 minutes (IQR 12.8–24.1) and 15.5 minutes (IQR 11.7–20.1), respectively ($p=0.001$). Consultations with new patients took longer than follow-up cases ($p<0.001$). Based on our results, new patients presenting with general dermatological conditions should be allocated 25 minutes per consultant-led consultation, while follow-up cases can be allocated 15 minutes per consultation. We recommend similar analyses of consultation lengths in other specialties to inform the development of efficient, specialty-specific clinic models.

KEYWORDS: Clinical times, consultation times, dermatology consultations

Introduction

Outpatient healthcare currently consumes more than one-third of the total health expenditure of 27 Organisation for the Economic Cooperation and Development (OECD) member countries, with spending estimated to be growing at an average annual growth rate of 2% in real terms.¹ There is mounting pressure across medical disciplines to improve efficiency in outpatient clinics to manage increasing workload and reduce spending. One proposed solution is the overbooking of patients, which creates a fine balance between avoiding wastage through patient non-attendance and servicing additional patients against prolonged patient wait times and clinic overtime.^{2–4} In order to develop an efficient clinic scheduling model, analyses of consultation lengths, which are specialty-specific, need to be carried out. These are often neglected and clinic scheduling is more often than not empirical rather than evidence based.

Dermatology is one of the busiest outpatient specialties in England. Between 2014 and 2015, close to 3.2 million dermatology outpatient consultations were carried out, an increase of 16.7% in just 5 years.^{5,6} The professional body of physicians in England, the Royal College of Physicians (RCP), has suggested that in a 4-hour clinic, consultant dermatologists can see up to 12 new patients (20 minutes per consultation) or 16 follow-up cases (15 minutes per consultation).⁷ However, these recommendations are based on consensus rather than evidence. In addition, no recommendations exist for dermatology consultations performed by other grades of clinicians.

Our study aimed to determine the amount of time consultants, doctors in training and nurse specialists take to perform general dermatological or skin cancer consultations, as well as to investigate key factors affecting consultation lengths.

Methods

Study setting

A cross-sectional study was carried out in the dermatology department of the Royal Liverpool and Broadgreen Hospital NHS Trust in England, which provides a dermatology service to a catchment population of more than two million people.⁸ In addition to general dermatology clinics, the department also runs a range of specialist clinics, such as biologics, phototherapy, vulval, hyperhidrosis and skin transplant clinics. A rapid lesion skin cancer clinic service is also provided to see patients with potential skin cancers within 14 days of referral. The department does not provide a paediatric service and such cases were, therefore, excluded from this study.

Patients can be seen in consultant-led clinics by consultant dermatologists or, under their supervision, by specialty registrars in year 3 through 6 of their training (ST3–6), general practice specialty trainees (GPSTs) or core medical specialty trainees (CMTs) who shared the consultants' lists. Patients can also be seen in nurse-led clinics by a nurse consultant or nurse specialists trained in the management of dermatological conditions.

This study was a service evaluation that was exempt from ethics approval and no explicit patient consent was required.

Data collection

All clinic consultations carried out over a 2-week period in January 2016 were eligible for inclusion in the study. For each consultation, data collected included patient demographics, nature of clinic attended, grade of clinician seen and whether

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senior review was carried out. The length of each consultation was recorded in real time by either an independent assessor or the clinicians themselves, and encompassed time taken for review of medical notes, prescribing, requesting of tests, senior review (when performed), documentation and dictation.

Clinic letters for all consultations were reviewed and final diagnoses recorded were broadly classified into three categories:

- A 'general dermatology' for rash, inflammatory or infectious skin disease,
- B 'skin tumour' for lesions, benign or malignant tumours, or
- C both.

For example, cases of psoriasis seen in general dermatology or biologics clinics would have been assigned to category A, while cases diagnosed with squamous cell carcinomas were assigned to category B, regardless of whether they were seen in a general dermatology, specialist skin transplant or rapid lesion skin cancer clinic.

Data analysis

Median time for consultation lengths were analysed by nature of clinic appointment (new or follow-up), nature of diagnosis, type of clinic attended and grade of clinician seen. When patients were seen by non-consultant grade clinicians, consultation lengths were also analysed by whether senior review took place.

Statistical analysis was performed using IBM SPSS Statistics for Windows, version 22 (IBM Corp, Armonk, NY, USA); p-values of less than 0.05 were considered statistically significant.

Results

Data from a total of 607 consultations were analysed. Patient age ranged from 16 to 96 years, with a median age of 51 (interquartile range (IQR) 33–68) years. There were 339 (56%) female and 268 (44%) male patients. A total of 23 healthcare professionals (nine consultants, one nurse consultant, five specialty registrars (one ST4, two ST5s and two ST6s), five nurse specialists and three GPST/CMTs) contributed to the study.

Among the consultations, 276 (46%) were carried out in general clinics, 134 (22%) in skin cancer clinics, 54 (9%) in specialist biologics, phototherapy, vulval, hyperhidrosis or skin transplant clinics, and 143 (24%) in nurse-led treatment monitoring, cryotherapy, skin cancer or phototherapy clinics. There were 166 (27%) and 441 (73%) new and follow-up cases, respectively. A total of 346 (57%) category A diagnoses were made; 235 (39%) category B and 26 (4%) category C cases were seen.

Consultation lengths

Consultation lengths ranged from 3.3 to 66.1 minutes. Median consultation lengths are shown in Table 1. Of the shortest 10% of all consultations (n=60), half involved category B diagnoses. A diagnosis of acne vulgaris was made in 15 of the 29 consultations that involved category A diagnoses. Among the 60 longest consultations, more category A diagnoses were made (n=46) than category B or C, and included 21 cases of psoriasis and six cases of eczema. Eleven of the 16 clinicians involved in

Table 1. Median consultation lengths, minutes (interquartile range)

Nature of consultation	Clinician seen					
	Consultant (n=189)	Specialty registrar (n=206)	Nurse consultant (n=24)	Nurse specialist (n=143)	GPST/CMT (n=45)	All clinicians
All consultations (n=607)	14.9 (10.7–20.9)	16.1 (13.2–20.7)	14.5 (10.8–16.5)	16.5 (13.6–24.3)	18.5 (13.6–26.4)	16.0 (11.9–21.3)
Nature of diagnosis						
General (n=346)	16.1 (10.8–24.2)	16.2 (13.2–21.1)	-	20.2 (14.1–27.5)	18.0 (12.0–25.5)	16.5 (12.8–24.1)
Lesion (n=235)	13.5 (9.9–18.9)	15.9 (13.1–19.8)	14.9 (10.7–16.6)	13.9 (10.6–17.5)	21.8 (15.7–26.8)	15.5 (11.7–20.1)
Consultation type						
New (n=166)	19.7 (13.7–25.1)	16.3 (13.7–21.0)	14.5 (10.8–19.0)	22.4 (15.0–27.2)	25.9 (17.6–35.0)	17.6 (13.8–24.2)
Follow-up (n=441)	13.3 (9.7–19.4)	16.1 (13.1–20.4)	13.3 (7.2–16.4)	16.0 (13.2–23.4)	14.9 (10.8–21.5)	15.7 (11.4–20.8)
General dermatological (category A) diagnosis						
New (n=62)	24.3 (16.9–29.2)	16.3 (13.4–21.7)	-	26.5 (23.4–28.7)	39.3 (25.6–59.9)	21.8 (16.3–27.6)
Follow-up (n=284)	14.0 (9.7–20.5)	16.0 (12.9–21.0)	-	18.6 (14.0–26.3)	14.9 (9.2–20.0)	16.0 (11.5–21.7)
Skin tumours (category B) diagnosis						
New (n=101)	15.6 (13.0–20.1)	16.0 (13.6–20.6)	14.5 (10.8–19.0)	19.0 (12.5–20.4)	22.9 (16.8–31.4)	16.0 (13.2–21.0)
Follow-up (n=134)	12.0 (7.7–18.9)	15.8 (12.8–18.8)	15.3 (6.0–16.6)	13.8 (10.5–15.6)	18.2 (9.9–22.6)	14.4 (10.7–18.8)

CMT = core medical trainee; GPST = general practice specialty trainee

the 60 shortest consultations were also involved in the longest consultations.

The median times taken for all consultations involving category A or category B diagnoses were 16.5 (IQR 12.8–24.1) minutes and 15.5 (IQR 11.7–20.1) minutes, respectively (median difference=2.1, 95% CI 0.8–3.3, $p=0.001$). Category C patients took a median time of 16.3 (IQR 12.9–20.5) minutes. On the whole, consultations with new patients took longer than follow-up cases (17.6 (IQR 13.8–24.2) minutes versus 15.7 (IQR 11.4–20.8) minutes, median difference=2.6, 95% CI 1.3–3.9, $p<0.001$).

There was no apparent difference in the length of consultations carried out in a general clinic compared with a specialist clinic (median difference=–1.9, 95% CI –4.1 to 0.0, $p=0.056$).

Unlike other clinicians, registrars required the same amount of time to see patients, regardless of the type of presentation and nature of diagnosis ($p>0.05$). In addition, there was no observed association between the grade of the registrar seeing patients and consultation lengths ($p>0.05$). Registrar-led consultations were an overall 8.1% longer than consultant-led ones (median difference = 1.5, 95% CI 0.1–2.8, $p=0.027$). However, registrars were faster than consultants at seeing new category A patients (median difference=–6.7, 95% CI –10.8 to –2.4, $p=0.004$).

Senior reviews

Senior reviews took place in 26 (13%) consultations involving specialty registrars (Table 2). Among those involving nurse specialists and GPST/CMTs, reviews (by consultants, nurse consultant or registrars) occurred in 14 (10%) and 43 (96%) consultations, respectively. The presence of senior review was associated with a longer consultation.

Discussion

Consultation length can be a proxy measure of care, with longer consultations associated with increased patient satisfaction and improved patient enablement.^{9,10} Research into consultation lengths to date has been mostly limited to studies of GP consultations.^{11,12} Specialist consultations are different in nature and can take a different amount of time. Furthermore, consultation lengths can differ between medical or surgical specialties, and need to be explored separately.

In dermatology, the increasing incidence of diseases such as skin cancer and atopic dermatitis, improved treatments and changing patient expectations and perceptions to skin conditions have led to an increased demand for services. While scheduling models exist to improve efficiency in clinics, studies

of consultation lengths need to be carried out in conjunction to inform such designs.

Recommendations

We have demonstrated that consensus estimations of consultation lengths can be unreliable. Current RCP recommendations have failed to consider the casemix seen in dermatology clinics and the proposed consultation length for new patients is insufficient when seeing cases presenting with general dermatological conditions.

We recommend that distinction be made between patients presenting with rash or general dermatological conditions (category A) and those presenting with suspected skin tumours (category B). The former often require more detailed interview, exploration of systemic symptoms and explanation of a more complicated treatment regimen. For new patients in this category, we propose an increase in the current recommended time to 25 minutes per consultant-led consultation, taking into account the median time of 24.3 minutes that was taken by consultants in this study. This allows up to 10 patients to be seen in a 4-hour clinic. Follow-up cases can be allocated 15 minutes per consultation (16 cases per clinic, same as current recommendation). For category B, a new patient consultation should be given between 15–20 minutes, while a follow-up patient will require 15 minutes. In a 4-hour clinic, up to 15 new or 16 follow-up category B patients may be seen. In clinics where registrars are present, the number of patients on the consultant list should be reduced by at least one, to allow time for senior review of cases.

Our study involved relatively experienced registrars with at least 1 year of dermatology training. On the whole, they required more time to see patients compared with consultants, except when new patients presenting with general dermatological conditions were involved. This may be dependent on the casemix seen, with potentially more complex cases dealt with by consultants. Although our study has provided an insight to the time taken by experienced registrars to see patients, it is important that clinic templates for registrars are designed to take into consideration individual training needs and to allow time for learning, assessment and reflection.

Limitations

In our study, clinics designed to see general dermatological patients may include some skin cancer patients. This similarly affected other types of clinics. Therefore, we have analysed

Table 2. Senior reviews in consultations carried out by specialty registrars, nurse specialists and GPST/CMTs

Clinician seen	Senior review			No senior review		p-value ^c
	n (%)	Consult length, minutes (IQR) ^a	Time for review, minutes (IQR) ^b	n (%)	Consult length, minutes (IQR)	
Registrars (n=206)	26 (13%)	21.4 (17.8–32.3)	3.5 (2.0–8.5)	180 (87%)	15.8 (13.0–19.7)	0.000
Nurse specialists (n=143)	14 (10%)	21.9 (17.7–32.7)	4.5 (2.0–5.3)	129 (90%)	16.0 (13.1–24.2)	0.022
GPST/CMT (n=45)	43 (96%)	20.5 (14.5–26.4)	5.0 (3.0–9.0)	2 (4%)	6.2 (6.2–6.3)	0.002

^aMedian total consultation length; ^btime used during clinic consultation for senior review; ^ccomparison of consultation lengths with or without senior reviews. CMT = core medical trainee; GPST = general practice specialty trainee; IQR = interquartile range

consultation lengths by nature of diagnoses rather than clinic types. With this, we made the assumption that the nature of the initial referral and final diagnosis will remain the same.

The number of clinicians involved in our study would reasonably account for different working styles and is representative of the wider dermatology clinician body. While our results provide a general guide to appointment scheduling in dermatology units, the applicability of our results to another unit should be interpreted in the context of population demographics, patient casemix and local clinic set-up. In addition, paediatric dermatological cases were excluded in this study. Further studies are needed to include paediatric dermatology services.

Conclusion

To our knowledge, this is the first study of its kind looking at dermatology consultation times. Appointment scheduling in dermatology should take into account the grade of clinician running the clinic, nature of patient attendance (new or follow-up), and nature of presentation (general skin condition or suspected skin tumour). New patients presenting with general dermatological conditions should be allocated 25 minutes per consultant-led consultation, while follow-up cases can be allocated 15 minutes per consultation.

Further studies involving paediatric dermatology cases are required. We recommend similar analyses of consultation lengths in other specialties to inform the development of efficient, specialty-specific clinic models. ■

Conflicts of interest

The authors have no conflicts of interest to declare.

Author Contributions

AAS and JLCW designed the study. All authors were involved in data collection. JLCW analysed the data and drafted the manuscript. All authors were involved in the interpretation of results and approved the final version of the manuscript. AAS supervised the study.

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